

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Meramec River

Water Body Segment at a Glance:

County: Franklin/Jefferson
Nearby Cities: Pacific, Arnold
Length of impaired segments:
 Water Body ID 2183: 22 miles
 2185: 26 miles
Pollutant: Lead in Sediment
Source: Abandoned mill tailings



Scheduled for TMDL development: 2017

Description of the Problem

Beneficial uses of Meramec River

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation
- Secondary Contact Recreation
- Industrial Uses

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

- Missouri has no criteria for metals in sediment. Likewise, the U.S. Environmental Protection Agency has not yet established federal guidelines for toxic chemicals in stream or lake sediments. In lieu of such criteria, Probable Effect Levels suggested by McDonald, et. al¹, are used. PELs are the concentrations at which some toxic effect on aquatic life is likely. For lead, that number is 128 µg /kg (micrograms per kilograms or parts per billion)
- Though there are no specific criteria that apply to this river, all Missouri water bodies are protected by the general (narrative) criteria found at 10 CSR 20-7.031(3). The particular general criteria that apply to the Meramec River include:

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.

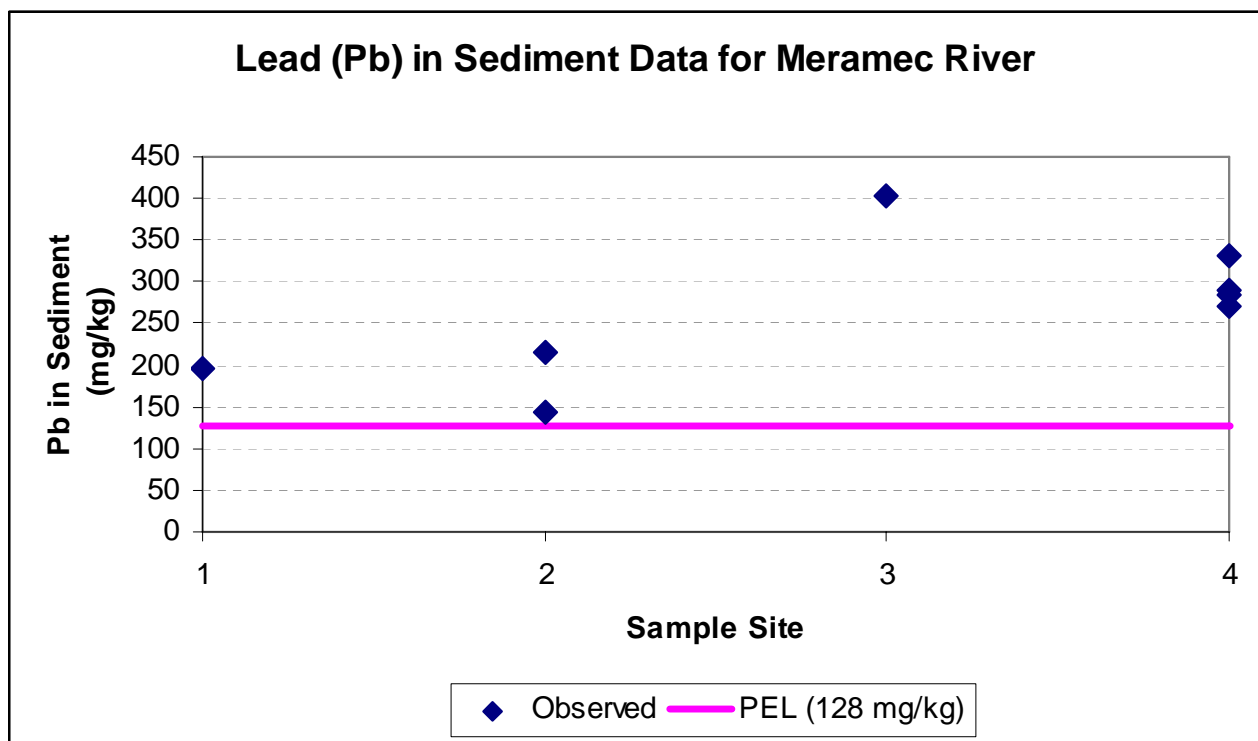
¹ *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems*, D. MacDonald, et al., 2000

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.

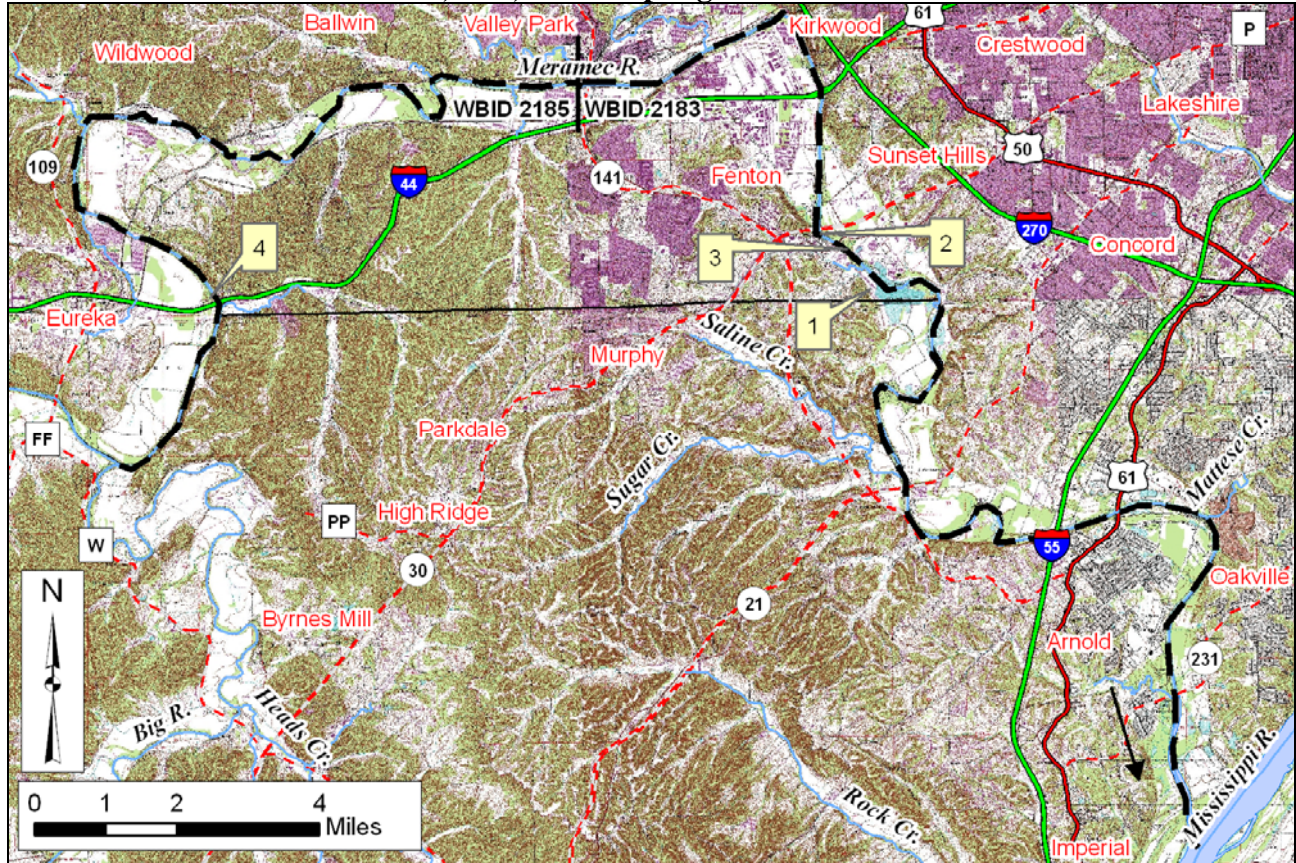
Background information and Water Quality Data

This part of the Meramec River flows north, east and then south to join the Mississippi River south of St. Louis, Mo. The impairment starts where the Big River enters the Meramec, bringing contaminated lead mining tailings eroded from huge tailings piles in Bonne Terre, Desloge and Leadwood in St. Francis County. Contamination of stream sediments has led to the contamination of fish and other aquatic life. New studies are showing that the lead and other metals in these tailings are toxic to mussels, crayfish and other small invertebrates that inhabit the bottom of the river. It is already known that lead bioaccumulates in the bodies of aquatic creatures. This has been documented in the levels of lead in fish in Big River. Now the sediment has spread from Big River to the Meramec River.

The impairment is based on data collected by the department in 1998, 1999, 2006 and 2007. Eight of eight sediment samples exceeded 150% of PEL value.



Map showing the impaired segments of the Meramec River, which here form the line between St. Louis and Jefferson counties, Mo., and sampling sites



— — — Impaired Segment

→ Direction of flow

Sample Sites

- 1 – Meramec R. at George Winter Park
- 2 – Meramec R. at State Highway 30
- 3 – Meramec R. near State Highway 30 bridge
- 4 – Meramec R. near Eureka

For more information call or write:

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